

Prohibitions contained in the Ocean Plan and Basin Plan, this prohibition is not retained in section III of this Order.

3. Order No. R9-2011-0019 contained Discharge Prohibition III.D, which prohibited the discharge from the Facilities through the EOO at Discharge Point No. 001 during dry-weather months (May to October) in excess of calendar-monthly average flow rate of 43.3 MGD, and during wet-weather months (November to April) in excess of calendar-monthly average flow rate of 52.6 MGD. Because the EOO flow prohibitions are now included as effluent limitations, these requirements are not retained in section III of this Order.
4. Order No. R9-2011-0019 contained Discharge Prohibition III.E, which prohibited the discharge flow from the EWPCF in excess of 40.5 MGD. Because the EWPCF prohibition is now included as an effluent limitation, this requirement is not retained in section III of this Order. As noted in section IV.A.2.c in this Fact Sheet, the limitation has changed from average daily to average monthly.
5. Order No. R9-2011-0019 contained Discharge Prohibition III.F, which prohibited the discharge flow from the MWRP in excess of 5 MGD. Because the MWRP flow prohibition is now included as an effluent limitation, this requirement is not retained in section III of this Order.
6. Order No. R9-2011-0019 contained Discharge Prohibition III.G, which prohibited the discharge flow from the CWRF in excess of 4 MGD. Because the CWRF flow prohibition is now included as an effluent limitation, this requirement is not retained in section III of this Order. Also, this Order corrects the discharge flow from 4.0 MGD (the original production rate for recycled water at the CWRF) to 0.2 MGD (waste brine from the RO process at the CWRF).
7. Order No. R9-2011-0019 contained Discharge Prohibition III.H, which prohibited the discharge from the SWRP. As detailed in section II.A.5 of this Fact Sheet, the City of Vista disconnected the SWRP from the EOO. Thus, this requirement is not retained in this Order.
8. Order No. R9-2011-0019 contained San Diego Water Board Standard Provisions VI.A.2.a and VI.A.2.b, which required compliance with the discharge prohibitions of the Ocean Plan and Basin Plan, respectively. Because these provisions are now included as Discharge Prohibitions III.C and III.D in this Order, these provisions are not retained in section VI.A.2, *San Diego Water Board Standard Provisions*, in this Order.

B. Technology-Based Effluent Limitations (TBELs)

1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at 40 CFR section 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 CFR part 133. Discharges must also meet TBELs based on Ocean Plan Table 2.

Regulations promulgated in 40 CFR section 125.3(a)(1) require TBELs for municipal dischargers to be placed in NPDES permits based on *Secondary Treatment Standards or Equivalent to Secondary Treatment Standards*.

The CWA established the minimum performance requirements for POTWs [defined in section 304(d)(1)]. Section 301(b)(1)(B) of that Act requires that such treatment works

must, as a minimum, meet effluent limitations based on secondary treatment as defined by the USEPA Administrator.

Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in 40 CFR part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of biochemical oxygen demand (BOD), total suspended solids (TSS), and pH.

In compliance with 40 CFR sections 122.45(f)(1) and 423.15, mass-based limitations have also been established in this Order for conventional, nonconventional, and toxic pollutants, with some exceptions. Section 122.45(f)(2) of 40 CFR allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass-based limitations provided in 40 CFR section 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature.

Mass-based effluent limitations were calculated using the following equation:
$$\text{lbs/day} = \text{flow (MGD)} \times \text{pollutant concentration (mg/L)} \times 8.34$$

2. Applicable Technology-Based Effluent Limitations

- a. **Federal Regulations.** Part 133 of 40 CFR establishes the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD₅ and TSS. 40 CFR section 133.102(a)(4) allows for effluent limitations for CBOD₅ to be applied in lieu of effluent limitations for BOD₅ where BOD₅ may not provide a reliable measure of the oxygen demand of the effluent. USEPA has determined that a 30-day average effluent limitation of 25 mg/L and a 7-day average effluent limitation of 40 mg/L are effectively equivalent to the secondary treatment standards for BOD₅. Consistent with Order No. R9-2011-0019, this Order includes effluent limitations for CBOD₅.

Section 133.102 of 40 CFR, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal of CBOD₅ and TSS shall not be less than 85 percent. Consistent with Order No. R9-2011-0019, this Order contains limitations requiring an average of 85 percent removal of CBOD₅ and TSS over each calendar month.

The secondary treatment regulations at 40 CFR part 133 also require that pH be maintained between 6.0 and 9.0 standard units.

These TBELs based on secondary treatment standards are applicable to each of the POTWs (the EWPCF and the MWRP) prior to the commingling of their respective effluents with any other wastewater. Thus, compliance with these effluent limitations must be determined at Monitoring Locations M-001 and M-002, upstream of the location where these wastewaters commingle with other wastewaters.

Section 122.45(d) of 40 CFR require that all permit limitations be expressed, unless impracticable, as average monthly effluent limitations (AMELs) and average weekly effluent limitations (AWELs) for POTWs. TBELs based on secondary treatment standards for CBOD₅, TSS, and pH are summarized in the following table, applying AMELs in lieu of 30-day average and AWELs in lieu of 7-day average.

Table F-8. Summary of TBELs Based on Secondary Treatment Standards¹

Parameter	Units	Effluent Limitations			
		Average Monthly	Average Weekly	Instantaneous Minimum	Instantaneous Maximum
CBOD ₅	mg/L	25	40	--	--
	% Removal	≥85	--	--	--
TSS	mg/L	30	45	--	--
	% Removal	≥85	--	--	--
pH	standard units	--	--	6.0	9.0

¹ See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.

- b. **Ocean Plan.** The Ocean Plan is applicable, in its entirety, to point source discharges to the ocean. Therefore, the discharge of wastewater to the Pacific Ocean at Discharge Point No. 001 is subject to the Ocean Plan.

The Ocean Plan establishes water quality objectives, general requirements for management of waste discharged to the ocean, effluent quality requirements for waste discharges, discharge prohibitions, and general provisions. Further, Table 2 of the Ocean Plan establishes TBELs for POTWs and industrial discharges for which effluent limitation guidelines have not been established. Consistent with Order No. R9-2011-0019, numeric effluent limitations based on Table 2 of the Ocean Plan are being established in this Order for EWPCF, MWRP, and CWRF, at Monitoring Locations M-001, M-002, and M-005, respectively.

Because secondary treatment standards contain effluent limitations for TSS that are more stringent than Table 2 of the Ocean Plan, the more stringent effluent limitations for TSS will be applied to discharges from the EWPCF and the MWRP.

Table 2 of the Ocean Plan requires dischargers to, as a monthly average, achieve a percent removal of 75 percent for suspended solids from the influent stream before discharging wastewater to the Pacific Ocean, except that the effluent limitation to be met shall not be less than 60 mg/L. The brine discharge generated at the CWRF is considered an industrial discharge and is subject to Table 2 limits prior to commingling at the EOO. The TBELs from the Ocean Plan are summarized in Table F-9:

Table F-9. Summary of TBELs on Table 2 of the Ocean Plan¹

Parameter	Units	Effluent Limitations		
		Average Monthly	Average Weekly	Instantaneous Maximum
Oil and Grease	mg/L	25	40	75
TSS	mg/L	60 ²	--	--
	% Removal	75	--	--
Settleable Solids	ml/L	1.0	1.5	3.0
Turbidity	NTU	75	100	225
pH	standard units	Within the limits of 6.0 to 9.0 at all times		

¹ See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.

² Table 2 of the Ocean Plan requires that the Discharger shall, as a monthly average, remove 75 percent of suspended solids from the influent stream before discharging wastewater to the Pacific Ocean, except that the

effluent limitation to be met shall not be less than 60 mg/L. Applicable only to the discharge of brine from the CWRP.

- c. **Effluent Flow.** Order No. R9-2011-0019 contained a discharge prohibition which prohibited the discharge from the Facilities through the EOO at Discharge Point No. 001 during dry-weather months (May to October) in excess of calendar-monthly average flow rate of 43.3 MGD, and during wet-weather months (November to April) in excess of calendar-monthly average flow rate of 52.6 MGD. Order No. R9-2011-0019 also contained discharge prohibitions which prohibited the discharge from the EWPCF, the MWRP, and the CWRP in excess of a daily average effluent flow of 40.5, 5, and 4 MGD, respectively. These flow prohibitions are being carried over as effluent limitations, with the following exceptions.

As noted in section II.A.1, according to the *Certification of the Design Capacity of the Existing Encina Water Pollution Control Facility*, dated June 29, 2010, the EWPCF has an average annual design capacity of 40.5 MGD. The effluent flow limitation was incorrectly added in Order No. R9-2011-0019 as a maximum daily. Thus, it is appropriate to correct the effluent flow limitation for EWPCF from maximum daily to average monthly as requested by the Discharger.

In Order No. R9-2011-0019, the flow prohibition of 4 MGD for the CWRP included the CWRP effluent that is not recycled (e.g., effluent not meeting CCR title 22 water recycling requirements) in addition to the waste brine. However, as noted in section II.A.3 of this Fact Sheet, up to 0.2 MGD of CWRP waste brine is discharged through the EOO, while the CWRP effluent that is not recycled is discharged back to the EWPCF's aeration basins. Thus, this Order corrects the discharge flow from 4.0 MGD (the original production rate for recycled water at the CWRP) to 0.2 MGD (waste brine from the RO process at the CWRP).

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

CWA section 301(b) and 40 CFR section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

Section 122.44(d)(1)(i) of 40 CFR requires that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed State criterion or policy interpreting the State's narrative criterion, supplemented with other relevant information, as provided in 40 CFR section 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan and Ocean Plan, and achieve applicable water quality objectives and criteria that are contained in other State plans and policies, or any applicable water quality criteria contained in the Ocean Plan.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The Basin Plan and Ocean Plan designate beneficial uses, establish water quality objectives, and contain implementation programs and policies to achieve those objectives for all waters.

- a. **Basin Plan.** The beneficial uses specified in the Basin Plan applicable to the Pacific Ocean are summarized in section III.C.1 of this Fact Sheet.

The Basin Plan water quality objective for dissolved oxygen applicable to ocean waters is stated as follows: "The dissolved oxygen concentration in ocean waters shall not at any time be depressed more than 10 percent from that which occurs naturally, as the result of the discharge of oxygen demanding waste materials."

The Basin Plan states, "The pH value shall not be changed at any time more than 0.2 pH units from that which occurs naturally."

- b. **Ocean Plan.** The beneficial uses specified in the Ocean Plan for the Pacific Ocean are summarized in section III.C.2 of this Fact Sheet. The Ocean Plan also includes water quality objectives for the ocean receiving water for bacterial characteristics, physical characteristics, chemical characteristics, biological characteristics, and radioactivity.

Table 1 of the Ocean Plan includes the following water quality objectives for toxic pollutants and whole effluent toxicity:

- i. 6-month median, daily maximum, and instantaneous maximum objectives for 21 chemicals and chemical characteristics, including total residual chlorine and chronic toxicity, for the protection of marine aquatic life.
- ii. 30-day average objectives for 20 non-carcinogenic chemicals for the protection of human health. These have been applied as AMELs.
- iii. 30-day average objectives for 42 carcinogenic chemicals for the protection of human health. These have been applied as AMELs.
- iv. Daily maximum objectives for acute and chronic toxicity.

3. Determining the Need for WQBELs

The San Diego Water Board evaluated the need for effluent limitations for non-conventional and toxic pollutant parameters, based on water quality objectives in Table 1 of the Ocean Plan. The evaluation was performed in accordance with 40 CFR section 122.44(d) and guidance for statistically determining the "reasonable potential" for a discharged pollutant to exceed an objective, as outlined in the revised *Technical Support Document for Water Quality-based Toxics Control* (TSD; EPA/505/2-90-001, 1991) and the Ocean Plan Reasonable Potential Analysis (RPA) Amendment that was adopted by the State Water Board on April 21, 2005. The statistical approach combines knowledge of effluent variability (as estimated by a coefficient of variation) with the uncertainty due to a limited amount of effluent data to estimate a maximum effluent value at a high level of confidence. This estimated maximum effluent value is based on a lognormal distribution of daily effluent values. Projected receiving water values (based on the estimated maximum effluent value or the reported maximum effluent value and minimum probably initial dilution) can then be compared to the appropriate objective to determine potential for an exceedance of that objective and the need for an effluent limitation. According to the Ocean Plan amendment, the RPA can yield three endpoints: 1) Endpoint 1, an effluent limitation is required and monitoring is required; 2) Endpoint 2, an

effluent limitation is not required and the San Diego Water Board may require monitoring; and 3) Endpoint 3, the RPA is inconclusive, monitoring is required, and an existing effluent limitation may be retained or a permit reopener clause may be included to allow inclusion of an effluent limitation if future monitoring warrants the inclusion. Endpoint 3 is typically the result when there are fewer than 16 data points and all are censored data (i.e., below quantitation or method detection levels for an analytical procedure).

The implementation provisions for Table 1 of the Ocean Plan specify that the minimum initial dilution is the lowest average initial dilution within any single month of the year. Dilution estimates are to be based on observed waste flow characteristics, observed receiving water density structure, and the assumption that no currents, of sufficient strength to influence the initial dilution process, flow across the discharge structure. Before establishing a dilution credit for a discharge, it must first be determined if, and how much, receiving water is available to dilute the discharge.

In 2005, the San Diego Water Board, with assistance from the State Water Board, had determined the minimum initial dilution factor (Dm) to be 144 parts seawater to 1 part wastewater (144:1) for the discharge of up to 43.3 MGD of effluent through the EOO using the USEPA-approved computer modeling package Visual Plumes with the UM3 model. The computer modeling was performed based on characteristics of the EOO, the effluent, and the receiving water, subject to the input limitations of Visual Plumes. The flowrate used in the computer modeling is equivalent to the dry-weather flowrate limitation of 43.3 MGD. Initial dilution factors were determined for each month during the period July 2003 through June 2004 using receiving water characteristics for each month provided by the Discharger. The minimum initial dilution was the lowest dilution factor attained using the December 2003 ambient profile. The Discharger has indicated that no additions or modifications to the Facilities have been proposed that would alter the previously determined dilution characteristics. Therefore, the Dm of 144:1 was retained from Order Nos. R9-2005-0219 and R9-2011-0019 and applied to WQBELs established herein.

Conventional pollutants were not considered as part of the RPA. TBELs for these pollutants are included in this Order as described in section IV.B of this Fact Sheet.

This Order does not include effluent limitations for bacterial indicators for the following reasons:

- The discharge point (Discharge Point No. 001) is located at the terminus of the Encina Ocean Outfall, located 7,800 feet offshore at a depth of 168 feet.
- The dilution factor is 144.
- The San Diego Water Board is not aware of any shellfish harvesting within the zone of initial dilution of the EOO.
- There are no kelp beds within the zone of initial dilution of the EOO.
- The near shore and offshore receiving water monitoring results for total coliform, fecal coliform, and enterococcus between January 2011 and June 2018 consistently complied with the Ocean Plan Bacterial Standards.
- As stated in a letter dated March 3, 2011, the Discharger ensures compliance with receiving water requirements by sampling early each month, expediting testing of samples, and conducting repeat sampling if there are any exceedances of receiving water limitations.

Using the RPcalc 2.0 software tool developed by the State Water Board for conducting reasonable potential analyses, the San Diego Water Board has conducted the RPA for the constituents listed in Table F-10. For constituents that do not display reasonable potential, this Order includes desirable maximum effluent concentrations which were derived using effluent limitation determination procedures described below and are referred to in this Order as “performance goals.” A narrative limit statement to comply with all Ocean Plan objectives requirements is provided for those parameters not displaying reasonable potential. The Discharger is required to monitor for these constituents as stated in the Monitoring and Reporting Program (MRP, Attachment E) of this Order in order to gather data for use in RPAs for future permit reissuances.

Effluent data provided in the Discharger’s monitoring reports for the Facilities from June 2011 through December 2017 were used in the RPA. A minimum probable initial dilution of 144:1 was considered in this evaluation.

A summary of the RPA results is provided in Table F-10:

Table F-10. RPA Results Summary¹

Parameter	Units	N ²	MEC ^{3,4}	Most Stringent Criteria	Background	RPA Endpoint ⁵
Arsenic, Total Recoverable	µg/L	25	10	8 ⁶	3 ⁷	2
Cadmium, Total Recoverable	µg/L	25	<0.1	1 ⁶	0	2
Chromium, Total Recoverable	µg/L	25	<5.7	2 ⁶	0	2
Copper, Total Recoverable	µg/L	25	28	3 ⁶	2 ⁷	2
Lead, Total Recoverable	µg/L	25	0.19	2 ⁶	0	2
Mercury, Total Recoverable	µg/L	25	<0.2	0.04 ⁶	0.0005 ⁷	2
Nickel, Total Recoverable	µg/L	25	5	5 ⁶	0	2
Selenium, Total Recoverable	µg/L	25	19	15 ⁶	0	2
Silver, Total Recoverable	µg/L	25	<5.0	0.7 ⁶	0.16 ⁷	2
Zinc, Total Recoverable	µg/L	25	49	20 ⁶	8 ⁷	2
Cyanide, Total	µg/L	25	42	1 ⁶	0	2
Total Residual Chlorine ⁸	µg/L	2,250	5,000	2 ⁶	0	1
Ammonia	µg/L	75	57,300	600 ⁶	0	2
Acute Toxicity	TUa	11	2.62	0.3 ⁹	0	2
Chronic Toxicity ¹⁰	TUc	45	71.4	1 ⁹	0	2
Phenolic Compounds ¹	µg/L	26	<0.98	30 ⁵	0	2
Chlorinated Phenolics ¹	µg/L	26	<0.091	1 ⁵	0	2
Endosulfan ¹	µg/L	26	<0.007	0.009 ⁵	0	2
Endrin	µg/L	26	<0.002	0.002 ⁵	0	2
HCH ¹	µg/L	23	<0.004	0.004 ⁵	0	3
Radioactivity	picocuries per liter (pCi/L)	24	22.94	11	0	3
Acrolein	µg/L	13	<1.7	220 ¹²	0	3
Antimony	µg/L	13	<2.0	1,200 ¹²	0	3
Bis(2-chloroethoxy) methane	µg/L	13	<0.5	4.4 ¹²	0	3
Bis(2-chloroisopropyl) ether	µg/L	13	<0.4	1,200 ¹²	0	3
Chlorobenzene	µg/L	13	<0.18	570 ¹²	0	3

Parameter	Units	N ²	MEC ^{3,4}	Most Stringent Criteria	Background	RPA Endpoint ⁵
Chromium (III), Total Recoverable	µg/L	13	<0.008	190,000 ¹²	0	3
Di-n-butyl phthalate	µg/L	13	<0.4	3,500 ¹²	0	3
Dichlorobenzenes ¹	µg/L	13	<0.45	5,100 ¹²	0	3
Diethyl phthalate	µg/L	13	<0.5	33,000 ¹²	0	3
Dimethyl phthalate	µg/L	13	<0.5	820,000 ¹²	0	3
4,6-Dinitro-2-methylphenol	µg/L	13	<0.3	220 ¹²	0	3
2,4-Dinitrophenol	µg/L	13	<0.2	4.0 ¹²	0	3
Ethylbenzene	µg/L	13	<0.26	4,100 ¹²	0	3
Fluoranthene	µg/L	13	<0.02	15 ¹²	0	3
Hexachlorocyclopentadiene	µg/L	13	<0.3	58 ¹²	0	3
Nitrobenzene	µg/L	13	<0.5	4.9 ¹²	0	3
Thallium, Total Recoverable	µg/L	13	0.11	2 ¹²	0	3
Toluene	µg/L	13	1.2	85,000 ¹²	0	3
Tributyltin	µg/L	13	<0.004	0.0014 ¹²	0	3
1,1,1-Trichloroethane	µg/L	13	<0.16	540,000 ¹²	0	3
Acrylonitrile	µg/L	13	<0.69	0.10 ¹²	0	3
Aldrin	µg/L	13	<0.002	0.000022 ¹²	0	3
Benzene	µg/L	13	<0.18	5.9 ¹²	0	3
Benzidine	µg/L	13	<4.0	0.000069 ¹²	0	3
Beryllium, Total Recoverable	µg/L	13	<0.1	0.033 ¹²	0	3
Bis(2-chloroethyl) ether	µg/L	13	<0.4	0.045 ¹²	0	3
Bis(2-ethylhexyl) phthalate	µg/L	13	<3.0	3.5 ¹²	0	3
Carbon tetrachloride	µg/L	13	<0.16	0.90 ¹²	0	3
Chlordane ¹	µg/L	13	<0.002	0.000023 ¹²	0	3
Chlorodibromomethane	µg/L	13	<0.5	8.6 ¹²	0	3
Chloroform	µg/L	13	1.9	130 ¹²	0	2
DDT ¹	µg/L	13	<0.004	0.00017 ¹²	0	3
1,4-Dichlorobenzene	µg/L	13	<0.18	18 ¹²	0	3
3,3-Dichlorobenzidine	µg/L	13	<5.0	0.0081 ¹²	0	3
1,2-Dichloroethane	µg/L	13	<0.18	28 ¹²	0	3
1,1-Dichloroethylene	µg/L	13	<0.21	0.9 ¹²	0	3
Dichlorobromomethane	µg/L	13	<0.5	6.2 ¹²	0	3
Dichloromethane	µg/L	13	0.5	450 ¹²	0	3
1,3-Dichloropropene	µg/L	13	<0.16	8.9 ¹²	0	3
Dieldrin	µg/L	13	<0.002	0.00004 ¹²	0	3
2,4-Dinitrotoluene	µg/L	13	<0.4	2.6 ¹²	0	3
1,2-Diphenylhydrazine	µg/L	13	<0.5	0.16 ¹²	0	3
Halomethanes ¹	µg/L	13	<0.6	130 ¹²	0	3
Heptachlor	µg/L	13	<0.003	0.00005 ¹²	0	3
Heptachlor Epoxide	µg/L	13	<0.002	0.00002 ¹²	0	3
Hexachlorobenzene	µg/L	13	<0.4	0.00021 ¹²	0	3
Hexachlorobutadiene	µg/L	13	<0.4	14 ¹²	0	3
Hexachloroethane	µg/L	13	<0.4	2.5 ¹²	0	3
Isophorone	µg/L	13	<0.5	730 ¹²	0	3
N-nitrosodimethylamine	µg/L	13	<0.3	7.3 ¹²	0	3
N-nitrosodi-N-propylamine	µg/L	13	<0.5	0.38 ¹²	0	3
N-nitrosodiphenylamine	µg/L	13	<0.3	2.5 ¹²	0	3

Parameter	Units	N ²	MEC ^{3,4}	Most Stringent Criteria	Background	RPA Endpoint ⁵
Polynuclear Aromatic Hydrocarbons (PAHs) ¹	µg/L	13	0.08	0.0088 ¹²	0	3
Polychlorinated Biphenyls (PCBs) ¹	µg/L	13	<0.34	0.000019 ¹²	0	3
TCDD equivalents ¹	µg/L	13	<0.16	0.0000000039 ¹²	0	3
1,1,2,2-Tetrachloroethane	µg/L	13	<0.1	2.3 ¹²	0	3
Tetrachloroethylene	µg/L	13	<0.19	2.0 ¹²	0	3
Toxaphene	µg/L	13	<0.24	0.00021 ¹²	0	3
Trichloroethylene	µg/L	13	<0.2	27 ¹²	0	3
1,1,2-Trichloroethane	µg/L	13	<0.16	9.4 ¹²	0	3
2,4,6-Trichlorophenol	µg/L	13	<0.5	0.29 ¹²	0	3
Vinyl Chloride	µg/L	13	<0.25	36 ¹²	0	3

¹ See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.

² Number of data points available for the RPA.

³ If there is a detected value, the highest reported value is summarized in the table. If there are no detected values, the lowest MDL is summarized in the table.

⁴ Note that the reported MEC does not account for dilution. The RPA does account for dilution; therefore it is possible for a parameter with an MEC in exceedance of the most stringent criteria not to present a RP (i.e., Endpoint 2).

⁵ End Point 1 – RP determined, limit required, monitoring required.

End Point 2 – Discharger determined not to have RP, monitoring may be established.

End Point 3 – RPA was inconclusive, carry over previous limitations if applicable, and establish monitoring

⁶ Based on the 6-Month Median in the Table 1 of the Ocean Plan.

⁷ Background concentrations contained in Table 3 of the Ocean Plan.

⁸ The MWRP utilizes chlorine disinfection.

⁹ Based on the Daily Maximum in Table 1 of the Ocean Plan.

¹⁰ Includes results for Giant Kelp (germination and growth), Red Abalone (exclusive and inclusive), and Topsmelt (survival and growth).

¹¹ Not to exceed limits specified in title 17, division 1, chapter 5, subchapter 4, group 3, article 3, section 30253 of the CCR. Levels of radioactivity that exceed the applicable criteria are not expected in the discharge.

¹² Based on the 30-Day Average in Table 1 of the Ocean Plan.

Consistent with 40 CFR section 122.44(l)(2)(i)(B), effluent limitations from Order No. R9-2011-0019 will not be retained for constituents for which reasonable potential has not been determined. Instead, performance goals have been assigned for these constituents. Except as discussed below, parameters for which Endpoint 2 was concluded are determined not to have reasonable potential, thus it is inappropriate to establish effluent limitations for these parameters.

For parameters for which Endpoint 3 was concluded, reasonable potential was inconclusive. For parameters for which Endpoint 3 was concluded and previous effluent limitations had not been established in Order No. R9-2011-0019, performance goals have been retained. For parameters for which Endpoint 3 was concluded and previous effluent limitations had been established in Order No. R9-2011-0019, effluent limitations have been retained.

Reasonable potential to cause or contribute to an exceedance of water quality objectives contained within the Ocean Plan (i.e., Endpoint 1) was determined for total chlorine residual, and effluent limitations (based on the initial dilution of 144:1, as discussed below) have been retained from Order No. R9-2011-0019.

This Order retains chronic toxicity effluent limitations from Order No. R9-2011-0019 based on best professional judgement (BPJ). Because discharges into POTWs are ever changing, the effluent from POTWs is inconsistent and may have a mixture of known and unknown pollutants that could have synergistic or additive toxic effects on receiving waters. The mixture of known and unknown pollutants may come from nonresidential and residential sources in the Discharger's service areas. Even though the toxicity monitoring data for the past several years have been in compliance with chronic toxicity effluent limitations, increased and/or unknown pollutants could be introduced into the Discharger's POTWs from nonresidential and/or residential sources in the future that have synergistic or additive toxic effects. Additionally, if a toxic effect is discovered in the receiving water, the results of the whole effluent testing (WET) may be useful for identifying the source of the toxicity.

The MRP (Attachment E) is designed to obtain additional information for these constituents to determine if reasonable potential exists for these constituents in future permit renewals and/or updates.

4. WQBEL Calculations

- a. From the Table 1 water quality objectives of the Ocean Plan, effluent limitations and performance goals are calculated according to the following equation for all pollutants, except for acute toxicity (if applicable) and radioactivity:

$$C_e = C_o + D_m (C_o - C_s) \text{ where,}$$

C_e = the effluent limitation ($\mu\text{g/L}$)

C_o = the water quality objective to be met at the completion of initial dilution ($\mu\text{g/L}$)

C_s = background seawater concentration

D_m = minimum probable initial dilution expressed as parts seawater per part wastewater

- b. As discussed in section IV.C.3 above, the D_m of 144:1 was retained from Order No. R9-2011-0019.
- c. Table 3 of the Ocean Plan establishes background concentrations for some pollutants to be used when determining reasonable potential (represented as " C_s "). In accordance with Table 1 implementing procedures, C_s equals zero for all pollutants not established in Table 3. The background concentrations provided in Table 3 of the Ocean Plan are summarized in Table F-11:

Table F-11. Pollutants Having Background Concentrations

Pollutant	Background Seawater Concentration
Arsenic, Total Recoverable	3 $\mu\text{g/L}$
Copper, Total Recoverable	2 $\mu\text{g/L}$
Mercury, Total Recoverable	0.0005 $\mu\text{g/L}$
Silver, Total Recoverable	0.16 $\mu\text{g/L}$
Zinc, Total Recoverable	8 $\mu\text{g/L}$

¹ See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.

- d. As an example, effluent limitations for total residual chlorine are determined as follows:

Water quality objectives from the Ocean Plan for total residual chlorine are:

Table F-12. Example Parameter Water Quality Objectives¹

Parameter	Units	6-Month Median	Daily Maximum	Instantaneous Maximum
Total Chlorine Residual	µg/L	2	8	60

¹ See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.

Using the equation, $C_e = C_o + D_m (C_o - C_s)$, effluent limitations/performance goals are calculated as follows.

Total Chlorine Residual:

$$C_e = 2 + 144 (2 - 0) = 290 \text{ (6-Month Median)}$$

$$C_e = 8 + 144 (8 - 0) = 1,160 \text{ (Daily Maximum)}$$

$$C_e = 60 + 144 (60 - 0) = 8,700 \text{ (Instantaneous Maximum)}$$

Based on the implementing procedures described above, effluent limitations and performance goals have been calculated for all parameters in Table 1 of the Ocean Plan and incorporated into this Order.

- e. Section 122.45(f)(1) of the 40 CFR requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 CFR section 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. However, section III.C.4.j of the Ocean Plan requires that mass limitations be established for all parameters in Table 1 of the Ocean Plan. This Order includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 CFR section 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g., CTR criteria and MCLs) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

Mass-based effluent limitations were calculated using the following equation:

$$\text{lbs/day} = \text{permitted flow (MGD)} \times \text{pollutant concentration (mg/L)} \times 8.34$$

- f. Based on the results of the RPA and BPJ, a summary of the WQBELs established in this Order are provided in Table F-13:

Table F-13. Summary of WQBELs at Monitoring Location M-004¹

Parameter	Units	Effluent Limitations		
		6-Month Median	Maximum Daily	Instantaneous Minimum
OBJECTIVES FOR PROTECTION OF MARINE AQUATIC LIFE				
Total Chlorine Residual ¹	µg/L	2.9E+02	1.1E+03	8.7E+03
	lbs/day	1.0E+02	4.2E+02	3.1E+03
Chronic Toxicity ^{2,3}	“Pass” / “Fail”	--	“Pass”	--

¹ See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.

² The maximum daily effluent limitation (MDEL) shall be reported "Pass" or "Fail" and "% Effect."

³ A numeric WQBEL is established because effluent data showed that there is reasonable potential for the effluent to cause or contribute to an exceedance of the chronic toxicity water quality objective. The chronic toxicity performance goal is protective of both the numeric acute and chronic toxicity 2015 Ocean Plan water quality objectives. The performance goal will be implemented using *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine*

Organisms (EPA/600/R-95/136, 1995), current USEPA guidance in the *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, June 2010) (https://www3.epa.gov/npdes/pubs/wet_final_tst_implementation2010.pdf), and USEPA Regions 8, 9, and 10, Toxicity Training Tool (January 2010).

- g. A summary of the performance goals is provided in Table F-14 of this Fact Sheet. Performance goals are calculated for M-004 using the design capacity of 43.3 MGD.

Table F-14. Summary of Performance Goals at Monitoring Location M-004¹

Parameter	Unit	Performance Goals ^{2,3}			
		6-Month Median	Average Monthly	Maximum Daily	Instantaneous Maximum
OBJECTIVES FOR PROTECTION OF MARINE AQUATIC LIFE					
Arsenic, Total Recoverable	µg/L	7.3E+02	--	4.2E+03	1.1E+04
	lbs/day	2.6E+02	--	1.5E+03	4.0E+03
Cadmium, Total Recoverable	µg/L	1.5E+02	--	5.8E+02	1.5E+03
	lbs/day	5.2E+01	--	2.1E+02	5.2E+02
Chromium (VI), Total Recoverable ⁴	µg/L	2.9E+02	--	1.2E+03	2.9E+03
	lbs/day	1.0E+02	--	4.2E+02	1.0E+03
Copper, Total Recoverable	µg/L	1.5E+02	--	1.5E+03	4.1E+03
	lbs/day	5.3E+01	--	5.2E+02	1.5E+03
Lead, Total Recoverable	µg/L	2.9E+02	--	1.2E+03	2.9E+03
	lbs/day	1.0E+02	--	4.2E+02	1.0E+03
Mercury, Total Recoverable	µg/L	5.7E+00	--	2.3E+01	5.8E+01
	lbs/day	2.1E+00	--	8.4E+00	2.1E+01
Nickel, Total Recoverable	µg/L	7.3E+02	--	2.9E+03	7.3E+03
	lbs/day	2.6E+02	--	1.0E+03	2.6E+03
Selenium, Total Recoverable	µg/L	2.2E+03	--	8.7E+03	2.2E+04
	lbs/day	7.9E+02	--	3.1E+03	7.9E+03
Silver, Total Recoverable	µg/L	7.8E+01	--	3.8E+02	9.9E+02
	lbs/day	2.8E+01	--	1.4E+02	3.6E+02
Zinc, Total Recoverable	µg/L	1.7E+03	--	1.0E+04	2.8E+04
	lbs/day	6.3E+02	--	3.8E+03	1.0E+04
Cyanide, Total	µg/L	1.5E+02	--	5.8E+02	1.5E+03
	lbs/day	5.2E+01	--	2.1E+02	5.2E+02
Ammonia, Total (as nitrogen)	µg/L	8.7E+04	--	3.5E+05	8.7E+05
	lbs/day	3.1E+04	--	1.3E+05	3.1E+05
Phenolic Compounds (non-chlorinated) ¹	µg/L	4.4E+03	--	1.7E+04	4.4E+04
	lbs/day	1.6E+03	--	6.3E+03	1.6E+04
Chlorinated Phenolics ¹	µg/L	1.5E+02	--	5.8E+02	1.5E+03
	lbs/day	5.2E+01	--	2.1E+02	5.2E+02
Endosulfan ¹	µg/L	1.3E+00	--	2.6E+00	3.9E+00
	lbs/day	4.7E-01	--	9.4E-01	1.4E+00

Parameter	Unit	Performance Goals ^{2,3}			
		6-Month Median	Average Monthly	Maximum Daily	Instantaneous Maximum
Endrin	µg/L	2.9E-01	--	5.8E-01	8.7E-01
	lbs/day	1.0E-01	--	2.1E-01	3.1E-01
HCH (BHC) ¹	µg/L	5.8E-01	--	1.2E+00	1.7E+00
	lbs/day	2.1E-01	--	4.2E-01	6.3E-01
Radioactivity	pCi/L	Not to exceed limits specified in title 17, division 1, chapter 5, subchapter 4, group 3, article 3, section 30253 of the CCR, reference to section 30253 is prospective, including future changes to any incorporated provisions of federal law, as the changes take effect.			
OBJECTIVES FOR PROTECTION OF HUMAN HEALTH – NONCARCINOGENS					
Acrolein	µg/L	--	3.2E+04	--	--
	lbs/day	--	1.2E+04	--	--
Antimony	µg/L	--	1.7E+05	--	--
	lbs/day	--	6.3E+04	--	--
Bis(2-chloroethoxy) Methane	µg/L	--	6.4E+02	--	--
	lbs/day	--	2.3E+02	--	--
Bis(2-chloroisopropyl) Ether	µg/L	--	1.7E+05	--	--
	lbs/day	--	6.3E+04	--	--
Chlorobenzene	µg/L	--	8.3E+04	--	--
	lbs/day	--	3.0E+04	--	--
Chromium (III), Total Recoverable ⁴	µg/L	--	2.8E+07	--	--
	lbs/day	--	9.9E+06	--	--
Di-n-butyl Phthalate	µg/L	--	5.1E+05	--	--
	lbs/day	--	1.8E+05	--	--
Dichlorobenzenes ¹	µg/L	--	7.4E+05	--	--
	lbs/day	--	2.7E+05	--	--
Diethyl Phthalate	µg/L	--	4.8E+06	--	--
	lbs/day	--	1.7E+06	--	--
Dimethyl Phthalate	µg/L	--	1.2E+08	--	--
	lbs/day	--	4.3E+07	--	--
4,6-dinitro-2-methylphenol	µg/L	--	3.2E+04	--	--
	lbs/day	--	1.2E+04	--	--
2,4-dinitrophenol	µg/L	--	5.8E+02	--	--
	lbs/day	--	2.1E+02	--	--
Ethylbenzene	µg/L	--	5.9E+05	--	--
	lbs/day	--	2.1E+05	--	--
Fluoranthene	µg/L	--	2.2E+03	--	--
	lbs/day	--	7.9E+02	--	--

Parameter	Unit	Performance Goals ^{2,3}			
		6-Month Median	Average Monthly	Maximum Daily	Instantaneous Maximum
Hexachlorocyclopentadiene	µg/L	--	8.4E+03	--	--
	lbs/day	--	3.0E+03	--	--
Nitrobenzene	µg/L	--	7.1E+02	--	--
	lbs/day	--	2.6E+02	--	--
Thallium, Total Recoverable	µg/L	--	2.9E+02	--	--
	lbs/day	--	1.0E+02	--	--
Toluene	µg/L	--	1.2E+07	--	--
	lbs/day	--	4.5E+06	--	--
Tributyltin	µg/L	--	2.0E-01	--	--
	lbs/day	--	7.3E-02	--	--
1,1,1-trichloroethane	µg/L	--	7.8E+07	--	--
	lbs/day	--	2.8E+07	--	--
OBJECTIVES FOR PROTECTION OF HUMAN HEALTH – CARCINOGENS					
Acrylonitrile	µg/L	--	1.5E+01	--	--
	lbs/day	--	5.2E+00	--	--
Aldrin	µg/L	--	3.2E-03	--	--
	lbs/day	--	1.2E-03	--	--
Benzene	µg/L	--	8.6E+02	--	--
	lbs/day	--	3.1E+02	--	--
Benzidine	µg/L	--	1.0E-02	--	--
	lbs/day	--	3.6E-03	--	--
Beryllium, Total Recoverable	µg/L	--	4.8E+00	--	--
	lbs/day	--	1.7E+00	--	--
Bis(2-chloroethyl) Ether	µg/L	--	6.5E+00	--	--
	lbs/day	--	2.4E+00	--	--
Bis(2-ethylhexyl) Phthalate	µg/L	--	5.1E+02	--	--
	lbs/day	--	1.8E+02	--	--
Carbon Tetrachloride	µg/L	--	1.3E+02	--	--
	lbs/day	--	4.7E+01	--	--
Chlordane ¹	µg/L	--	3.3E-03	--	--
	lbs/day	--	1.2E-03	--	--
Chlorodibromomethane (Dibromochloromethane)	µg/L	--	1.2E+03	--	--
	lbs/day	--	4.5E+02	--	--
Chloroform	µg/L	--	1.9E+04	--	--
	lbs/day	--	6.8E+03	--	--
DDT	µg/L	--	2.5E-02	--	--
	lbs/day	--	8.9E-03	--	--

Parameter	Unit	Performance Goals ^{2,3}			
		6-Month Median	Average Monthly	Maximum Daily	Instantaneous Maximum
1,4-dichlorobenzene	µg/L	--	2.6E+03	--	--
	lbs/day	--	9.4E+02	--	--
3,3'-dichlorobenzidine	µg/L	--	1.2E+00	--	--
	lbs/day	--	4.2E-01	--	--
1,2-dichloroethane	µg/L	--	4.1E+03	--	--
	lbs/day	--	1.5E+03	--	--
1,1-dichloroethylene	µg/L	--	1.3E+02	--	--
	lbs/day	--	4.7E+01	--	--
Dichlorobromomethane	µg/L	--	9.0E+02	--	--
	lbs/day	--	3.2E+02	--	--
Dichloromethane (Methylene Chloride)	µg/L	--	6.5E+04	--	--
	lbs/day	--	2.4E+04	--	--
1,3-dichloropropene (1,3-Dichloropropylenes)	µg/L	--	1.3E+03	--	--
	lbs/day	--	4.7E+02	--	--
Dieldrin	µg/L	--	5.8E-03	--	--
	lbs/day	--	2.1E-03	--	--
2,4-dinitrotoluene	µg/L	--	3.8E+02	--	--
	lbs/day	--	1.4E+02	--	--
1,2-diphenylhydrazine	µg/L	--	2.3E+01	--	--
	lbs/day	--	8.4E+00	--	--
Halomethanes ¹	µg/L	--	1.9E+04	--	--
	lbs/day	--	6.8E+03	--	--
Heptachlor	µg/L	--	7.3E-03	--	--
	lbs/day	--	2.6E-03	--	--
Heptachlor Epoxide	µg/L	--	2.9E-03	--	--
	lbs/day	--	1.0E-03	--	--
Hexachlorobenzene	µg/L	--	3.0E-02	--	--
	lbs/day	--	1.1E-02	--	--
Hexachlorobutadiene	µg/L	--	2.0E+03	--	--
	lbs/day	--	7.3E+02	--	--
Hexachloroethane	µg/L	--	3.6E+02	--	--
	lbs/day	--	1.3E+02	--	--
Isophorone	µg/L	--	1.1E+05	--	--
	lbs/day	--	3.8E+04	--	--
N-nitrosodimethylamine	µg/L	--	1.1E+03	--	--
	lbs/day	--	3.8E+02	--	--
N-nitrosodi-N-propylamine	µg/L	--	5.5E+01	--	--
	lbs/day	--	2.0E+01	--	--

Parameter	Unit	Performance Goals ^{2,3}			
		6-Month Median	Average Monthly	Maximum Daily	Instantaneous Maximum
N-nitrosodiphenylamine	µg/L	--	3.6E+02	--	--
	lbs/day	--	1.3E+02	--	--
PAHs ¹	µg/L	--	1.3E+00	--	--
	lbs/day	--	4.6E-01	--	--
PCBs ¹	µg/L	--	2.8E-03	--	--
	lbs/day	--	9.9E-04	--	--
TCDD Equivalents ¹	µg/L	--	5.7E-07	--	--
	lbs/day	--	2.0E-07	--	--
1,1,2,2-tetrachloroethane	µg/L	--	3.3E+02	--	--
	lbs/day	--	1.2E+02	--	--
Tetrachloroethylene	µg/L	--	2.9E+02	--	--
	lbs/day	--	1.0E+02	--	--
Toxaphene	µg/L	--	3.0E-02	--	--
	lbs/day	--	1.1E-02	--	--
Trichloroethylene	µg/L	--	3.9E+03	--	--
	lbs/day	--	1.4E+03	--	--
1,1,2-trichloroethane	µg/L	--	1.4E+03	--	--
	lbs/day	--	4.9E+02	--	--
2,4,6-trichlorophenol	µg/L	--	4.2E+01	--	--
	lbs/day	--	1.5E+01	--	--
Vinyl Chloride	µg/L	--	5.2E+03	--	--
	lbs/day	--	1.9E+03	--	--

¹ See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.

² Scientific "E" notation is used to express certain values. In scientific "E" notation, the number following the "E" indicates that position of the decimal point in the value. Negative numbers after the "E" indicate that the value is less than 1, and positive numbers after the "E" indicate that the value is greater than 1. In this notation a value of 6.1E-02 represents 6.1×10^{-2} or 0.061, 6.1E+02 represents 6.1×10^2 or 610, and 6.1E+00 represents 6.1×10^0 or 6.1.

³ The MER limitation, in lbs/day, was calculated based on the following equation: $MER (lbs/day) = 8.34 \times Q \times C$, where Q is the permitted flow for the EOO (43.3 MGD) and C is the concentration (mg/L).

⁴ Dischargers may, at their option, apply this performance goal as a total chromium performance goal.

5. Whole Effluent Toxicity (WET)

- a. The WET testing protects receiving waters from the aggregate toxic effect of a mixture of pollutants in the effluent. Because of the nature of discharges into the POTW sewershed, it is possible that toxic constituents could be present in the effluent Facilities, or could have synergistic or additive effects.
- b. For chronic toxicity, Order No. R9-2011-0019 established an effluent limitation of 144 TUC and quarterly monitoring. During the term of Order No. R9-2011-0019, the maximum reported effluent chronic toxicity value was 71.4 TUC (July 2012). Using the RPA procedures from the Ocean Plan, the effluent does not have reasonable potential to cause an exceedance of the narrative water quality objective for chronic

toxicity (i.e., Endpoint 1). However, as stated in section IV.C.3 of this Fact Sheet, the effluent limitation for chronic toxicity is being retained from Order No. R9-2011-0019 based on BPJ. This Order increases the monitoring frequency for chronic toxicity from quarterly to monthly to determine compliance with the maximum daily effluent limitation for chronic toxicity.

For this Order, chronic toxicity in the discharge is evaluated using USEPA's 2010 Test of Significant Toxicity (TST) hypothesis testing approach at the discharge "in-stream" waste concentration (IWC), as described in section VII.L of this Order and section III.C of the MRP (Attachment E). The TST statistical approach is described in the *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010), Appendix A, Figure A-1 and Table A-1. The TST null hypothesis shall be "mean discharge IWC response \leq 0.75 \times mean control response." A test that rejects this null hypothesis shall be reported as "Pass." A test that does not reject this null hypothesis shall be reported as "Fail." The chronic toxicity effluent limitation is expressed as "Pass" for each maximum daily individual result. The Discharger shall also report the "Percent Effect" as part of chronic toxicity result.

This Order contains a reopener to require the San Diego Water Board to modify the effluent limitations for toxicity, if necessary, to make it consistent with any new policy, law, or regulation.

- c. For acute toxicity, Order No. R9-2011-0019 established performance goals and semiannual monitoring. An acute toxicity test is conducted over a short time period and measures mortality. A chronic toxicity test is conducted over a short or a longer period of time and may measure mortality, reproduction, and growth. A chemical at a low concentration could have chronic effects but no acute effects until the chemical was at a higher concentration. Thus, chronic toxicity is a more stringent requirement than acute toxicity. To ensure the aggregated impacts of pollutants present within the Discharger's effluent does not result in the presence of toxicity within the receiving water, this Order maintains effluent limitations for chronic toxicity. This Order removes acute toxicity performance goals and effluent monitoring. Removal of numeric acute toxicity performance goals does not constitute backsliding because chronic toxicity is a more stringent requirement than acute toxicity.
- d. Section III.F of the 2015 Ocean Plan provides for more stringent requirements if necessary to protect the designated beneficial uses of ocean waters. Diamond et al. (2013) examined the side-by-side comparison of No Observed Effect Concentration (NOEC) and TST results using California chronic toxicity test data (including data from POTWs) for the West Coast marine methods and test species required under this Order. See Table 1 (method types 1 through 5) on page 1103 in Diamond J., Denton D., Roberts J., Zheng L. 2013. *Evaluation of the Test of Significant Toxicity for Determining the Toxicity of Effluents and Ambient Water Samples*. Environ Toxicol Chem 32:1101-1108. This comparison shows that while the TST and NOEC statistical approaches perform similarly most of the time, the TST performs better in identifying toxic and nontoxic samples, a desirable characteristic for chronic toxicity testing conducted under this Order. This examination also signals that the test methods' false positive rate (β no higher than 0.05 at a mean effect of 10%) and false negative rate (α no higher than 0.05 (0.25 for topsmelt) at a mean effect of 25%) are indeed low. This highlights that using the TST in this Order - in conjunction with other Ocean Plan requirements (West Coast WET method/test species for

monitoring and limiting chronic toxicity, the IWC representing the critical condition for water quality protection, the initial dilution procedure, and a single test for compliance)—provides increased assurance that statistical error rates are more directly addressed and accounted for in decisions regarding chronic toxicity in the discharge. As a result and in accordance with Ocean Plan section III.F, the San Diego Water Board is exercising its discretion to use the TST statistical approach for this discharge.

In January 2010, USEPA published a guidance document entitled; *USEPA Regions 8, 9 and 10 Toxicity Training Tool*, which among other things discusses permit limitation expression for chronic toxicity. The document acknowledges that NPDES regulations at 40 CFR section 122.45(d) require that all permit limits be expressed, unless impracticable, as an AWEL and AMEL for POTWs. Following section 5.2.3 of the Technical Support Document (TSD), the use of an AWEL and AMEL are not appropriate for WET. In lieu of an AWEL and AMEL for POTWs, USEPA recommends establishing a maximum daily effluent limitation (MDEL) for toxic pollutants and pollutants in water quality permitting, including WET. This is appropriate for two reasons. The basis for the average weekly and average monthly requirements for POTWs derives from secondary treatment regulations and is not related to the requirement to ensure achievement of water quality standard. Moreover, an average weekly and monthly requirement comprising up to seven and 31 daily samples, respectively, could average out daily peak toxic concentrations for WET and, therefore, the discharge's potential for causing acute and chronic effects would be missed. It is impracticable to use an AWEL and AMEL, because short-term spikes of toxicity levels that would be permissible under the 7-day and 31-day average scheme, respectively, would not be adequately protective of all beneficial uses. The MDEL is the highest allowable value for the discharge measured during a calendar day or 24-hour period representing a calendar day.

Later in June 2010, USEPA published another guidance document titled, *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, June 2010), in which they recommend the following: "Permitting authorities should consider adding the TST approach to their implementation procedures for analyzing valid WET data for their current NPDES WET Program." The TST approach is another statistical option for analyzing valid WET test data. Use of the TST approach does not result in any changes to USEPA's WET test methods. Section 9.4.1.2 of *USEPA's Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995), current *USEPA Guidance in the National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, June 2010), recognizes that, "the statistical methods in this manual are not the only possible methods of statistical analysis." The TST approach can be applied to acute (survival) and chronic (sublethal) endpoints and is appropriate to use for both freshwater and marine USEPA WET test methods.

The USEPA's WET testing program and acute and chronic WET methods rely on the measurement result for a specific test endpoint, not upon achievement of specified concentration-response patterns to determine toxicity. USEPA's WET methods do not require achievement of specified effluent or ambient concentration-

response patterns prior to determining that toxicity is present.⁴ Nevertheless, USEPA's acute and chronic WET methods require that effluent and ambient concentration-response patterns generated for multi-concentration acute and chronic toxicity tests be reviewed—as a component of test review following statistical analysis—to ensure that the calculated measurement result for the toxicity test is interpreted appropriately. (EPA-821-R-02-012, section 12.2.6.2; EPA-821-R-02-013, section 10.2.6.2). In 2000, USEPA provided guidance for such reviews to ensure that test endpoints for determining toxicity based on the statistical approaches utilized at the time the guidance was written (NOEC), percent waste giving 50 percent survival of test organisms (lethal concentration 50, LC 50), effects concentration at 25 percent (EC25) were calculated appropriately (EPA 821-B-00-004).

USEPA designed its 2000 guidance as a standardized step-by step review process that investigates the causes for ten commonly observed concentration-response patterns and provides for the proper interpretation of the test endpoints derived from these patterns for NOECs, LC 50, and EC25, thereby reducing the number of misclassified test results. The guidance provides one of three determinations based on the review steps: that calculated effect concentrations are reliable and should be reported, that calculated effect concentrations are anomalous and should be explained, or that the test was inconclusive and should be repeated with a newly collected sample. The standardized review of the effluent and receiving water concentration-response patterns provided by USEPA's 2000 guidance decreased discrepancies in data interpretation for NOEC, LC 50, and EC25 test results, thereby lowering the chance that a truly nontoxic sample would be misclassified and reported as toxic.

Appropriate interpretation of the measurement result from USEPA's TST statistical approach ("Pass"/"Fail") for effluent and receiving water samples is, by design, independent from the concentration-response patterns of the toxicity tests for those samples. Therefore, when using the TST statistical approach, application of USEPA's 2000 guidance on effluent and receiving waters concentration-response patterns will not improve the appropriate interpretation of TST results as long as all Test Acceptability Criteria (TAC) and other test review procedures—including those related to quality assurance for effluent and receiving water toxicity tests, reference toxicity tests, and control performance (mean, standard deviation, and coefficient of variation)—described by the WET test methods manual and TST guidance, are followed. The 2000 guidance may be used to identify reliable, anomalous, or inconclusive concentration-response patterns and associated statistical results to the extent that the guidance recommends review of test procedures and laboratory performance already recommended in the WET test methods manual. The guidance does not apply to single-concentration (IWC) and control statistical t-tests and does not apply to the statistical assumptions on which the TST is based. The San Diego Water Board will not consider a concentration-response pattern as sufficient basis to determine that a TST t- test result for a toxicity test is anything other than valid, absent other evidence. In a toxicity laboratory, unexpected concentration-response patterns should not occur with any regular frequency and consistent reports of anomalous or inconclusive concentration-response patterns or test results that are not valid will require an investigation of laboratory practices.

⁴ See, Supplementary Information in support of the Final Rule establishing WET test methods at 67 Fed. Reg. 69952, 69963, Nov. 19, 2002.

Any Data Quality Objectives or Standard Operating Procedure used by the toxicity testing laboratory to identify and report valid, invalid, anomalous, or inconclusive effluent or receiving water toxicity test measurement results from the TST statistical approach which include a consideration of concentration-response patterns and/or Percent Minimum Significant Differences (PMSDs) must be submitted for review by the San Diego Water Board, in consultation with USEPA, and the State Water Board's Quality Assurance Officer and Environmental Laboratory Accreditation Program (ELAP) (40 CFR section 122.44(h)). As described in the bioassay laboratory audit directives to the San Jose Creek Water Quality Laboratory from the State Water Board dated August 7, 2014, and from the USEPA dated December 24, 2013, the PMSD criteria only apply to compliance for NOEC and the sublethal endpoints of the NOEC, and therefore are not used to interpret TST results.

D. Final Effluent Limitations

1. Satisfaction of Anti-Backsliding Requirements

NPDES permits must conform with Anti-backsliding requirements discussed in section III.C.5 of this Fact Sheet. These Anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. This permit complies with all applicable federal and State Anti-backsliding regulations. The effluent limitations in this Order are at least as stringent as the effluent limitations in Order No. R9-2011-0019.

2. Satisfaction of Antidegradation Policies

The WDRs for the Discharger must conform with antidegradation requirements discussed in section III.C.4 of this Fact Sheet. The antidegradation policies require that beneficial uses and the water quality necessary to maintain those beneficial uses in the receiving waters of the discharge shall be maintained and protected, and, if existing water quality is better than the quality required to maintain beneficial uses, the existing water quality shall be maintained and protected unless allowing a lowering of water quality is necessary to accommodate important economic and social development or consistent with maximum benefit to the people of California. When a significant lowering of water quality is allowed by the San Diego Water Board, an antidegradation analysis is required in accordance with the State Water Board's Administrative Procedures Update (July 2, 1990), *Antidegradation Policy Implementation for NPDES Permitting*.

This Order complies with the antidegradation provision of 40 CFR section 131.12 and State Water Board Resolution No. 68-16. The effluent limitations in this Order are at least as stringent as the effluent limitations in Order No. R9-2011-0019, and no degradation of the receiving water is expected.

3. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based and WQBELs for individual pollutants. The TBELs consist of restrictions on CBOD₅, TSS, oil and grease, settleable solids, turbidity, and pH. Restrictions on these pollutants are discussed in section IV.B of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. These limitations are not more stringent than required by the CWA.

WQBELs have been derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved

pursuant to federal law and are the applicable federal water quality standards. The procedures for calculating the individual WQBELs are based on the Ocean Plan, which was approved by USEPA on February 14, 2006 and has since been further amended. All beneficial uses and water quality objectives contained in the Basin Plan were approved under State law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless “applicable water quality standards for purposes of the CWA” pursuant to 40 CFR section 131.21(c)(1). Collectively, this Order’s restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Not Applicable

G. Recycling Specifications – Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

Receiving water limitations of this Order are derived from the water quality objectives for ocean waters established by the Basin Plan and the Ocean Plan.

Prior to 2009, the San Diego Water Board interpreted the Bacterial Characteristics Water-contact Standards of the Ocean Plan to apply only in the zone bounded by the shoreline and a distance 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline, and within kelp beds. The Ocean Plan provides that these Bacteriological Standards also apply in designated areas outside this zone used for water contact sports, as determined by the Regional Water Boards (i.e., all waters designated with the contact water recreation (REC-1) beneficial use). These designated areas must be specifically defined in the Basin Plan. Because the San Diego Water Board has designated the ocean waters with the REC-1 beneficial use in the Basin Plan, the Ocean Plan Bacterial Standards apply throughout State of California territorial marine waters in the San Diego Region, which extend from surface to bottom, out to three nautical miles from the shoreline. This interpretation has been confirmed by USEPA.

As stated in section IV.C.3 of this Fact Sheet, the near shore and offshore receiving water monitoring results for total coliform, fecal coliform, and enterococcus between January 2011 and June 2018 consistently complied with the Ocean Plan Bacterial Standards.

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR section 122.42, are provided in the Standard Provisions (Attachment D).

Sections 122.41(a)(1) and (b) through (n) of 40 CFR establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the order. Section 123.25(a)(12) of 40 CFR allows the State to omit or modify conditions to impose more stringent requirements. In accordance with 40 CFR section 123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

This Order may be re-opened and modified, revoked and reissued, or terminated for cause in accordance with the provisions of 40 CFR parts 122, 123, 124, and 125. The San Diego Water Board may reopen the permit to modify permit conditions and requirements. Causes for modification include, but are not limited to, revisions to effluent limitations, receiving water requirements, monitoring and reporting requirements; participation in the Southern California Coastal Water Research Project (SCCWRP) monitoring program or other regional or water body monitoring coalition as determined by the San Diego Water Board; revisions to sludge use or disposal practices; or adoption of new or revised regulations, water quality control plans, or policies by the State Water Board or the San Diego Water Board, including revisions to the Basin Plan or Ocean Plan.

2. Special Studies and Additional Monitoring Requirements

a. Spill Prevention and Response Plans

The CWA largely prohibits any discharge of pollutants from point sources to waters of the U.S. except as authorized under an NPDES permit. In general, any point source discharge of sewage effluent to waters of the U.S. must comply with technology-based, secondary treatment standards, at a minimum, and any more stringent requirements necessary to meet applicable water quality standards and other requirements. The unpermitted discharge of wastewater to waters of the U.S. is illegal under the CWA. Further, the Basin Plan prohibits discharges of waste to land, except as authorized by WDRs or the terms described in Water Code section 13264. The Basin Plan also prohibits the unauthorized discharge of treated or untreated sewage to waters of the State or to a storm water conveyance system. Further, Discharge Prohibitions III.A and III.B of this Order prohibits the discharge of waste from the Facilities to a location other than Discharge Point No. 001.

Sanitary collection and treatment systems experience periodic failures resulting in discharges that may affect waters of the U.S. and/or State. There are many factors which may affect the likelihood of a spill. To ensure appropriate funding, management, and planning to reduce the likelihood of a spill, and to increase the level of response if a spill does occur, this Order requires the Discharger to maintain and implement Spill Prevention and Response Plans.

b. Spill Reporting Requirements

To determine compliance with Discharge Prohibitions III.A and III.B and provide appropriate notification to the general public for the protection of public health, spill reporting requirements have been established in section VI.C.2.b of this Order.

3. Best Management Practices and Pollution Prevention

The Pollutant Minimization Program is based on the requirements of the section III.C.9 of the Ocean Plan.

4. Construction, Operation, and Maintenance Specifications

- a. This Order carries over provisions from Order No. R9-2011-0019 to ensure that new treatment facilities and expansions of existing treatment facilities are completely constructed and operable prior to initiation of the discharge from the new or expanded facilities.

- b. This Order carries over a provision from Order No. R9-2011-0019 to ensure the Facilities are protected against the impact of storm events.
- c. This Order adds a provision to ensure the Facilities are protected against regional impacts due to climate change (e.g., sea level rise and floods).
- d. This Order adds a provision based on the requirements of 40 CFR section 122.41(e) to ensure the Facilities have adequate power.

5. Special Provisions for Publicly-Owned Treatment Works (POTWs)

a. Ensuring Adequate Treatment Plant Capacity

Order No. R9-2011-0019 required the Discharger to submit a written report to the Executive Officer within 90 days after the monthly average influent flow rate equals or exceeds 75 percent of the secondary treatment design capacity of the EWPCF or the MWRP. In lieu of a written report for each time the monthly average influent flow rate equals or exceeds 75 percent of the secondary treatment design capacity, the requirement has been changed to require the report be submitted four years prior to the time wastewater flows are projected to reach plant capacity, as stated in title 23, section 2232 of the CCR. The revised requirement states:

Four years prior to reaching POTW design capacity, the Discharger shall submit a Treatment Plant Capacity Report to the San Diego Water Board showing how flow volumes will be prevented from exceeding existing capacity or how capacity will be increased. A notification and copy of the report shall be sent to appropriate local elected officials, local permitting agencies, and the press. The required technical report shall be reviewed, approved, and jointly submitted by all planning and building departments having jurisdiction in the area served by the POTW. Opportunities for public participation and involvement are required during the preparation and development of the technical report. The report shall be accompanied by a statement outlining how interested persons were involved in the preparation of the technical report.

If the San Diego Water Board finds that the technical report indicates adequate steps are not being taken to address the capacity problem, the San Diego Water Board will adopt a time schedule order or other enforcement order. Such action will be preceded by notice and a hearing.

b. Pretreatment Program

The federal CWA section 307(b), and federal regulations, 40 CFR part 403, require POTWs to develop an acceptable industrial pretreatment program. A pretreatment program is required to prevent the introduction of pollutants, which will interfere with treatment plant operations or sludge disposal, and prevent pass through of pollutants that exceed water quality objectives, standards, or permit limitations. Pretreatment requirements are imposed pursuant to 40 CFR part 403.

The Discharger's implementation and enforcement of its approved pretreatment program is an enforceable condition of this Order. If the Discharger fails to perform the pretreatment functions, the San Diego Water Board, the State Water Board, or USEPA may take enforcement actions against the Discharger as authorized by the CWA and Water Code.

c. Sludge (Biosolids) Requirements

The use and disposal of biosolids within the U.S. is regulated under State and federal laws and regulations, including permitting requirements and technical standards included in 40 CFR part 503. The Discharger is required to comply with the standards and time schedules contained in 40 CFR part 503 for biosolids used or disposed of within the U.S.

Title 27, division 2, subdivision 1, section 20005 of the CCR establishes approved methods for the disposal of collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes. Requirements to ensure the Discharger disposes of solids in compliance with State and federal regulations have been included in this Order.

d. Collection System

The State Water Board issued Order 2006-0003-DWQ, *Statewide General Waste Discharge Requirements for Sanitary Sewer System* (Statewide General SSO Order) on May 2, 2006. The State Water Board amended the MRP for the Statewide General SSO Order through Order WQ 2013-0058-EXEC on August 6, 2013. The Statewide General SSO Order requires public agencies that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a POTW to enroll for coverage and comply with the Statewide General SSO Order. The Statewide General SSO Order requires agencies to develop Sanitary Sewer Management Plans (SSMPs) and report all sanitary sewer overflows, among other requirements and prohibitions.

The Statewide General SSO Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows that are more extensive, and therefore, more stringent than the requirements under federal standard provisions. The public agencies that are discharging wastewater into the Facilities' sewage collection system were required to obtain enrollment for regulation under the Statewide General SSO Order by December 1, 2006.

The San Diego Water Board issued Order No. R9-2007-0005, *Waste Discharge Requirements for Sewage Collection Agencies in the San Diego Region (Regional General SSO Order)*. Order No. R9-2007-0005 is more stringent and prescriptive than the Statewide General SSO Order. Agencies that are enrolled under the Statewide General SSO Order are also required to also comply with the Regional General SSO Order.

e. Requirements for Receipt of Anaerobically Digestible Material

Some POTWs choose to accept organic material such as food waste, fats, oils, and grease into their anaerobic digesters for co-digestion to increase production of methane and other biogases for energy production and to prevent such materials from being discharged into the collection system, which could cause sanitary sewer overflows. The California Department of Resources Recycling and Recovery has proposed an exemption from requiring Process Facility/Transfer Station permits where this activity is regulated under WDRs or NPDES permits. The proposed exemption is restricted to anaerobically digestible material that has been prescreened, slurried, and processed/conveyed in a closed system to be co-digested with regular POTW sludge. The proposed exemption requires that a POTW develop Standard Operating Procedures (SOPs) for the proper handling,

processing, tracking, and management of the anaerobically digestible material before it is received by the POTW.

The SOPs are required for POTWs that accept hauled food waste, fats, oil, and grease for injection into anaerobic digesters. The development and implementation of SOPs for management of these materials is intended to allow the California Department of Resources Recycling and Recovery to exempt this activity from separate and redundant permitting programs. If the POTW does not accept food waste, fats, oil, or grease for resource recovery purposes, it is not required to develop and implement SOPs.

6. Other Special Provisions – Not Applicable

7. Compliance Schedules – Not Applicable

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

CWA section 308 and 40 CFR sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the San Diego Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The MRP (Attachment E), establishes monitoring, reporting, and recordkeeping requirements that implement federal and State requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP (Attachment E) for the Facilities.

A. Core Monitoring Requirements

1. Influent Monitoring

Influent monitoring is required to determine the effectiveness of the source control program, to assess the performance of treatment facilities, and to evaluate compliance with effluent limitations. Influent monitoring frequencies and sample types for flow, CBOD₅, and TSS have been retained from Order No. R9-2011-0019 for the EWPCF and the MWRP. This Order removes influent monitoring for BOD₅ because this Order does not contain any limitations for BOD₅.

Refer to section III.A of the MRP (Attachment E).

2. Effluent Monitoring

Effluent monitoring is required to determine compliance with the conditions of this Order, to identify operational problems, to improve plant performance, and to conduct reasonable potential analyses for subsequent orders. Effluent monitoring also provides information on wastewater characteristics for use in interpreting water quality and biological data. Effluent monitoring requirements have been carried over from Order No. R9-2011-0019, with the following exceptions.

- This Order increases the monitoring frequency for CBOD₅ from three days per week to five days per week consistent with monitoring programs in other POTW permits recently adopted by the San Diego Water Board.
- This Order adds total dissolved solids to evaluate whether the dilution credit established in Order No. R9-2005-0219 is still applicable and appropriate and to re-assess the dilution credit if the brine discharges from the CWRF changes effluent quality discharged at Discharge Point No. 001.

- This Order adds quarterly monitoring requirements for total coliform, fecal coliform, and enterococcus to gather data for use in RPAs for future permit reissuances and to document the effluent's relationship with the receiving water monitoring data.
- This Order decreases the monitoring frequency for metals, cyanide, phenols, endosulfan, endrin, and HCH from quarterly to semiannually consistent with monitoring programs in other POTW permits recently adopted by the San Diego Water Board.
- As noted in section IV.C.5 of this Fact Sheet, this Order removes the requirement to monitor for acute toxicity in the effluent.
- This Order increases the monitoring frequency for chronic toxicity from quarterly to monthly to determine compliance with the maximum daily effluent limitation for chronic toxicity.
- For this Order, the Discharger may apply the performance goal for both chromium (VI) and chromium (III) as a total chromium performance goal. The Ocean Plan allows dischargers to meet the objective for chromium (VI) as a total chromium objective (footnote a, of Table 1 of the Ocean Plan). Total chromium includes both chromium (VI) and chromium (III) and applicable federal regulations in 40 CFR 136 under the CWA do not specify an analytical method for chromium (III)⁵. Thus, this Order allows the Discharger to also meet the objective for chromium (III) as a total chromium objective. If the Discharger only monitors for total chromium to meet the requirements for both chromium (VI) and chromium (III), the total chromium data will be used to determine if reasonable potential exists for both chromium (VI) and chromium (III) in future permit reissuances and/or updates.

Refer to section III.B of the MRP (Attachment E).

3. Whole Effluent Toxicity Testing Requirements

This Order contains chronic toxicity effluent limitations as described in section IV.C.5 of this Fact Sheet.

Consistent with the requirements of the Ocean Plan, section III.C.6 of the MRP (Attachment E) requires the Discharger to develop an Initial Investigation Toxicity Reduction Evaluation (TRE) Work Plan and submit the Initial Investigation TRE Work Plan within 90 days of the effective date of this Order. The Initial Investigation TRE Work Plan must describe steps the Discharger intends to follow if the effluent limitation for chronic toxicity is exceeded.

Section III.C.10 of the Ocean Plan requires a TRE if a discharge consistently exceeds an effluent limitation based on a toxicity objective in Table 1 of the Ocean Plan. To determine if the discharge consistently exceeds the toxicity effluent limitation, this Order requires the Discharger to notify the San Diego Water Board and to accelerate toxicity testing if the effluent limitation for chronic toxicity is exceeded in any one test. If any of the additional tests demonstrate toxicity, in accordance with section III.C.10 of the Ocean Plan, the Discharger is required to submit a Detailed TRE Work Plan in accordance with the its submitted Initial Investigation TRE Work Plan and USEPA guidance⁶ which shall

⁵ In order to obtain a value for chromium (III), two separate methods must be used: one for total chromium determination and one for chromium (VI) determination. The value for chromium (III) is obtained by subtracting the chromium (VI) value from the total chromium value.

⁶ See (a) TRE Guidance for Municipal Wastewater Treatment Plants (EPA 833-B-99-002, 1999); (b) Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (EPA/600/2-88/070); Toxicity

include: further steps taken by the Discharger to investigate, identify, and correct the causes of toxicity; actions the Discharger will take to mitigate the effects of the discharge and prevent the recurrence of toxicity; and a schedule for these actions. The Discharger must also implement a Toxicity Identification Evaluation (TIE), as necessary, based upon the magnitude and persistence of toxicity effluent limitation exceedances. Once the source of toxicity is identified, the Discharger must take all reasonable steps to reduce the toxicity to meet the chronic toxicity effluent limitation identified in section IV.A of this Order.

The above accelerated monitoring (a minimum of four succeeding tests performed at 14-day intervals) is based on the probability of encountering at least one toxicity exceedance assuming a true, but unknown level of occurrence.

Within 30 days of completion of the TRE, the Discharger must submit the results of the TRE, including a summary of the findings, data generated, a list of corrective actions taken or planned to achieve consistent compliance with the toxicity effluent limitation of this Order and prevent recurrence of exceedances of those effluent limitation, and a time schedule for implementation of any planned corrective actions. The Discharger must implement any planned corrective actions in the TRE Final Report in accordance with the specified time schedule, unless otherwise directed in writing by the San Diego Water Board. The corrective actions and time schedule must be modified at the direction of the San Diego Water Board.

Refer to section III.C of the MRP (Attachment E).

B. Receiving Water Monitoring Requirements

The receiving water and sediment monitoring requirements set forth below are designed to measure the effects of the EOO discharge on the receiving water. These monitoring requirements will remain in effect on an interim basis, pending development of a new and updated monitoring and assessment program.

Refer to section IV of the MRP (Attachment E).

1. Surf Zone Water Quality Monitoring Requirements

Surf zone water quality monitoring is required to determine if the effluent is causing or contributing to exceedances of the water quality standards in the surf zone, the area where the ocean surface waves come closer to shore and break. For surf zone stations S1 through S5, weekly monitoring for total and fecal coliform and enterococcus bacteria has been carried over from Order No. R9-2011-0019. The Ocean Plan requires repeat sampling if a single sample exceeds any of the bacterial single sample maximum standards. This requirement has been carried over from Order No. R9-2011-0019.

Refer to section IV.A of the MRP (Attachment E).

2. Near Shore and Offshore Water Quality Monitoring Requirements

Near shore and offshore water quality monitoring is required to determine if the effluent is causing or contributing to exceedances of the water quality standards outside of the ZID, to determine the fate of the effluent plume, and to gather data for future permit

Identification Evaluation, Phase I (EPA/600/6-91/005F); (c) Methods for Aquatic Toxicity Identification Evaluations, Phase II (EPA/600/R-92/080); (d) Methods for Aquatic Toxicity Identification Evaluations, Phase III (EPA/600/R-92/081); and (e) Marine Toxicity Identification Evaluation (TIE): Phase I Guidance Document (EPA/600/R-96-054, 1996).

reissuances. Near shore and offshore monitoring requirements have been carried over from Order No. R9-2011-0019 with the following exceptions:

- a. For near shore monitoring requirements, this Order adds monitoring requirements for temperature, depth, dissolved oxygen, light transmittance, pH, and salinity to better understand the characteristics of the wastewater plume.
- b. For offshore monitoring requirements, this Order changes the pH monitoring from a grab sample at the surface to profile monitoring; the temperature, dissolved oxygen, and light transmittance monitoring from surface, mid-depth, and bottom to profile monitoring; and the conductivity surface, mid-depth, and bottom monitoring to salinity profile monitoring. These changes are also made to better understand the characteristics of the wastewater plume.
- c. Monitoring frequency at near shore and offshore stations has been reduced from monthly to quarterly to help offset the costs of additional monitoring requirements and the development of a Plume Tracking Monitoring Program.

Refer to sections IV.B of the MRP (Attachment E).

3. Benthic Monitoring Requirements

Sediments integrate constituents that are discharged to the ocean. Most particles that come from the EOO discharge, and any associated contaminants, will eventually settle to the seafloor where they are incorporated into the existing sediments. Sediments can accumulate these particles over the years until the point where sediment quality has degraded and beneficial uses are impaired.

Section IV.C of the MRP (Attachment E) requires periodic assessment of sediment quality to evaluate potential effects of the EOO discharge and compliance with narrative water quality standards specified in the Ocean Plan. The required assessment consists of the measurement and integration of three lines of evidence: 1) physical and chemical properties of seafloor sediments, 2) seafloor sediment toxicity to assess bioavailability and toxicity of sediment contaminants, and 3) ecological status of the biological communities (benthos) that live in or on the seafloor sediments.

The benthic community is strongly affected by sediment composition (e.g., sand, silt, and clay distributions), sediment quality (e.g., chemistry, toxicity), and water quality. Because benthic macroinvertebrates (e.g., infauna) are dependent on their surroundings, they often serve as important biological indicators that reflect the overall conditions of the marine environment.

Benthic monitoring requirements have been updated from Order No. R9-2011-0019 to provide more detail on monitoring frequency, methods, and analyses. This Order adds monitoring requirements for selenium, iron, tin, aluminum, total nitrogen, total organic carbon, pesticides, DDT, PCBs, and PAHs to help determine if concentrations of pollutants in marine sediments are at levels that would degrade the benthic community. This Order removes the monitoring requirements for biochemical oxygen demand, chemical oxygen demand, cyanide, and radioactivity.

This Order also requires sediment toxicity analyses at each offshore station. Sediment toxicity is a measure of the response of invertebrates exposed to surficial sediments under controlled laboratory conditions. The sediment toxicity line of evidence is used to assess both pollutant-related biological effects and exposure and provides a measure of exposure to all pollutants present, including non-traditional or unmeasured chemicals.

To help facilitate collaboration with other agencies (e.g., dischargers to the Oceanside Ocean Outfall and/or San Elijo Ocean Outfall), receiving water sediment monitoring may be conducted anytime within the permit term, with the results due no later than 180 days before the expiration of this Order. This Order requires the development of a Sediment Monitoring Work Plan, which includes a schedule for completion of sediment sampling and submission of the results, protocols for sediment sample collection and processing, and the proposed methods for analyzing the sediment data and integrating the three lines of evidence.

Refer to section IV.C of the MRP (Attachment E).

4. Fish and Macroinvertebrate Monitoring Requirements

Marine aquatic invertebrates are excellent indicators of ecosystem health because they are ubiquitous, abundant, diverse, and typically sedentary. The growth, survival, and reproduction of aquatic invertebrates are all sensitive to declines in environmental health, making analysis of assemblage structure a good ecosystem monitoring tool. Additionally, many pollutants discharged into receiving waters have the potential to bioaccumulate and persist in the tissues of aquatic organisms, including marine fishes. Chemical pollutants that bioaccumulate tend to magnify in concentration as they pass through the aquatic food chain. Fish monitoring data is required to assess the human health risks for individuals who may consume fish and to assess trends of contaminants levels in the receiving water over time.

Fish and invertebrate monitoring requirements have been updated from Order No. R9-2011-0019 to provide more detail on monitoring frequency, methods, and analyses. This Order changes the monitoring period from once during year four of the permit term to once in the permit term, with the results due no later than 180 days before the expiration of this Order.

This Order also requires the analyses of fish tissue samples once per permit term to determine if concentrations of pollutants are bioaccumulating to levels that are harmful to human health or degrade marine communities. The fish targeted for tissue analysis are: 1) flatfish, which have greater exposure to pollutants sources such as sediment and sediment-dwelling prey; and 2) rockfish, which are commonly targeted by commercial and recreational fishers. Flatfish tissue samples will be collected at or near the trawl stations. The four trawl stations are classified into three zones for the purpose of collecting sufficient numbers of fish for tissue analyses. Trawl Zone 1 represents the nearfield zone, defined as the area within a 1-km radius of stations T2 and/or T3; Trawl Zone 2 is considered the northern farfield zone, defined as the area within a 1-km radius of station T4; and Trawl Zone 3 is considered the southern farfield zone, and is defined as the area centered within a 1-km radius of station T1. Rockfish tissue sample will be collected by hook and line or by setting baited lines from within zones surrounding rig fishing stations RF1, RF2, and RF3. Rig Fishing Zone 2 is the nearfield area centered within a 1-km radius of station RF2; Rig Fishing Zone 1 represents the southern farfield area centered within 1-km radius of station RF1; and Rig Fishing Zone 3 represents the northern farfield area centered within a 1-km radius of station RF3.

5. Groundwater – Not Applicable

C. Regional Monitoring Requirements

Regional ocean water monitoring provides information about the sources, fates, and effects of anthropogenic contaminants in the coastal marine environment necessary to make assessments over large areas. The large-scale assessments provided by regional monitoring

describe and evaluate cumulative effects of all anthropogenic inputs and enable better decision making regarding protection of beneficial uses of ocean waters. Regional monitoring data assists in the interpretation of core monitoring studies by providing a more accurate and complete characterization of reference conditions and natural variability. Regional monitoring also leads to methods standardization and improved quality control through inter-calibration exercise. The coalitions implementing regional monitoring enable sharing of technical resources, trained personnel, and associated costs. Focusing these resources on regional issues and developing a broader understanding of pollutants effects in ocean waters enables the development of more rapid and effective response strategies. Based on all of these considerations the San Diego Water Board supports regional approaches to monitoring ocean waters.

The Discharger shall, as directed by the San Diego Water Board, participate with other regulated entities, other interested parties, and the San Diego Water Board in development and implementation of new and improved monitoring and assessment programs for ocean waters in the San Diego Region and discharges to those waters.

Refer to section V of the MRP (Attachment E).

1. Kelp Bed Canopy Monitoring Requirements

Kelp consists of a number of species of brown algae. Along the central and southern California coast, giant kelp (*Macrocystis pyrifera*) is the largest species colonizing rocky, and in some cases sandy, subtidal habitats. Giant kelp is an important component of coastal and island communities in southern California, providing food and habitat for numerous animals.

Refer to section V.A of the MRP (Attachment E).

2. Southern California Bight Regional Monitoring Program Participation Requirements

The Southern California Bight (Bight), defined as the concave bend of the shoreline extending from Point Conception to Punta Colonet in Mexico, is host to unique, biologically diverse marine ecosystems that have long been vulnerable to the impacts of human activity. The coastal zone of the Bight hosts nearly 22 million U.S. residents that engage in a wide variety of industrial, military, and recreational activities. Approximately 5,600 miles of watersheds, half of which is highly developed, drain into the Bight. The Southern California Bight Regional Monitoring Program brings together researchers and water-quality managers to pool their resources and work together to investigate the condition of marine ecosystems both spatially and temporally, and extend greater protections to the Bight's diverse habitats and natural resources.

The Discharger is required to participate in the Southern California Bight Regional Monitoring Program coordinated by SCCWRP, or any other coordinator named by the San Diego Water Board, pursuant to Water Code sections 13267 and 13383, and 40 CFR section 122.48. The intent of the Southern California Bight Regional Monitoring Program is to maximize the efforts of all monitoring partners using a more cost-effective monitoring design and to best utilize the pooled scientific resources of the Bight.

During these coordinated sampling efforts, the Discharger's receiving water sampling and analytical effort, as defined in section IV of the MRP (Attachment E), may be reallocated to provide a regional assessment of the impact of the discharge of municipal wastewater to the Bight. In that event, the San Diego Water Board shall notify the Discharger in writing that the requirement to perform the receiving water sampling and analytical effort defined in section IV of the MRP (Attachment E) is suspended for the

duration of the reallocation. Anticipated modifications to the monitoring program will be coordinated so as to provide a more comprehensive picture of the ecological and statistical significance of monitoring results and to determine cumulative impacts of various pollution sources. The level of resources in terms of sampling and analytical effort redirected from the receiving water monitoring program required under section IV of the MRP (Attachment E) shall equal the level of resources provided to implement the regional monitoring and assessment program, unless the San Diego Water Board and the Discharger agree otherwise. The specific scope and duration of the receiving water monitoring program reallocation and redirection shall be determined and set by the San Diego Water Board, in consultation with the Discharger.

Refer to section V.B of the MRP (Attachment E).

D. Special Studies Requirements

- 1. Climate Change Action Plan.** Changing climate conditions may fundamentally alter the way POTWs are designed and operated. Climate change research indicates the overarching driver of change is increased atmospheric carbon dioxide (CO₂) from human activity. The increased CO₂ emissions trigger changes to climatic patterns, which increase the intensity of sea level rise and coastal storm surges (Δ Sea Level), lead to more erratic rainfall and local weather patterns (Δ Weather Patterns), trigger a gradual warming of freshwater and ocean temperatures (Δ Water Temperature), and trigger changes to ocean water chemistry (Δ Water pH). The changes to the sea level and weather patterns may affect the Facilities (e.g., flooding, increased influent flows during wet weather, and heat waves). The changes to the water temperature and pH may affect how the receiving waters reacts to the discharges. This Order requires the Discharger to prepare and submit a Climate Change Action Plan (CCAP) within three years of the effective date of this Order.
- 2. Plume Tracking Study.** This Order includes a requirement to conduct a Plume Tracking Study. Plume tracking is necessary to determine if the plume is moving towards the shore or surface where it may encroach upon water recreation areas. Additionally, plume direction and mixing have a direct effect on sediment loading as the direction of the plume determines where the discharged particles will eventually settle. While near shore and offshore monitoring can identify if the plume is encroaching upon the water recreation area during typical oceanographic conditions, infrequent sampling at preset intervals is unable to capture atypical oceanographic conditions that may lead to abnormal plume behavior. The Plume Tracking Study will be used to evaluate whether the monitoring methods and locations established in Order Nos. R9-2005-0219 and R9-2011-0019 and reinstated in this Order are still appropriate and applicable.

E. Other Monitoring Requirements

Discharge Monitoring Report-Quality Assurance (DMR-QA) Study Program. Under the authority of section 308 of the CWA (33 U.S.C. section 1318), USEPA requires major and selected minor permittees under the NPDES Program to participate in the annual DMR-QA Study Program. The DMR-QA Study evaluates the analytical ability of laboratories that routinely perform or support self-monitoring analyses required by NPDES permits. There are two options to satisfy the requirements of the DMR-QA Study Program: (1) The Discharger can obtain and analyze a DMR-QA sample as part of the DMR-QA Study; or (2) Per the waiver issued by USEPA to the State Water Board, the Discharger can submit the results of the most recent Water Pollution Performance Evaluation Study from its own laboratories or its contract laboratories. A Water Pollution Performance Evaluation Study is similar to the DMR-QA Study. Thus, it also evaluates a laboratory's ability to analyze wastewater samples to

produce quality data that ensure the integrity of the NPDES Program. The Discharger shall ensure that the results of the DMR-QA Study or the results of the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Board. The State Water Board's Quality Assurance Program Officer will send the DMR-QA Study results or the results of the most recent Water Pollution Performance Evaluation Study to USEPA's DMR-QA Coordinator and Quality Assurance Manager.

Refer to section I.H of the MRP (Attachment E)

VIII. PUBLIC PARTICIPATION

The San Diego Water Board has considered the issuance of WDRs that will serve as an NPDES permit for the Facilities. As a step in the WDR adoption process, the San Diego Water Board staff has developed tentative WDRs and has encouraged public participation in the WDR adoption process by providing a period of a minimum of 30 days for public review and comment on the Tentative Order.

A. Notification of Interested Parties

The San Diego Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through the North County Union Tribune on June 22, 2018. The Tentative Order was also posted on the San Diego Water Board website and emailed to the Discharger and all known interested parties on June 22, 2018.

The public also had access to the meeting agenda including all supporting documents and any changes in meeting dates and locations through the San Diego Water Board's website at: <http://www.waterboards.ca.gov/sandiego/>.

B. Written Comments

Interested persons were invited to submit written comments concerning tentative WDRs as provided through the notification process. Comments were due either in person or by mail to the Executive Office at the San Diego Water Board at 2375 Northside Drive, Suite 100, San Diego, CA 92108.

To be fully responded to by staff and considered by the San Diego Water Board, the written comments were due at the San Diego Water Board office by 5:00 p.m. on July 23, 2018.

C. Public Hearing

The San Diego Water Board held a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: **September 12, 2018**
Time: 9:00 AM
Location: Fallbrook Public Utility District
Board/Community Room
990 East Mission Road
Fallbrook, California 92088

Interested persons were invited to attend. At the public hearing, the San Diego Water Board heard testimony, pertinent to the discharge, WDRs, and permit. For accuracy of the record, important testimony was requested in writing.

D. Reconsideration of Waste Discharge Requirements

Any person aggrieved by this action of the San Diego Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and CCR, title 23, sections 2050. The State Water Board must receive the petition by 5:00 p.m., within 30 calendar days of the date of adoption of this Order at the following address, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or State holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Petitions may be sent in as follows:

By mail:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

In Person:

State Water Resources Control Board
Office of Chief Counsel
1001 I Street
Sacramento, California 95814

By email:

waterqualitypetitions@waterboards.ca.gov

By fax:

(916) 341-5199

For instructions on how to file a petition for review, see:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml

E. Information and Copying

The ROWD, other supporting documents, and comments received are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the San Diego Water Board by calling (619) 516-1990.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the San Diego Water Board, reference these Facilities, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this Order should be directed to Joann Lim by email at Joann.Lim@waterboards.ca.gov or by phone at (619) 521-3362.

ATTACHMENT G – DISCHARGE PROHIBITIONS CONTAINED IN THE OCEAN PLAN AND BASIN PLAN

I. Ocean Plan Discharge Prohibitions

- A.** The Discharge of any radiological chemical, or biological warfare agent or high-level radioactive waste into the ocean is prohibited.
- B.** Waste shall not be discharged to designated Areas of Special Biological Significance except as provided in chapter III.E. of the Ocean Plan.
- C.** Pipeline discharge of sludge to the ocean is prohibited by federal law; the discharge of municipal and industrial waste sludge directly to the ocean, or into a waste stream that discharges to the ocean, is prohibited. The discharge of sludge digester supernatant directly to the ocean, or to a waste stream that discharges to the ocean without further treatment, is prohibited.
- D.** The by-passing of untreated wastes containing concentrations of pollutants in excess of those of Table 1 or Table 2 [of the Ocean Plan] is prohibited, except as allowed by Federal Standard Provisions I.G and I.H (Attachment D).

II. Basin Plan Discharge Prohibitions

- A.** The discharge of waste to waters of the State in a manner causing, or threatening to cause a condition of pollution, contamination or nuisance as defined in Water Code section 13050, is prohibited.
- B.** The discharge of waste to land, except as authorized by WDRs of the terms described in Water Code section 13264 is prohibited.
- C.** The discharge of pollutants or dredged or fill material to waters of the United States except as authorized by an NPDES permit or a dredged or fill material permit (subject to the exemption described in Water Code section 13376) is prohibited.
- D.** Discharges of recycled water to lakes or reservoirs used for municipal water supply or to inland surface water tributaries thereto are prohibited, unless this San Diego Water Board issues an NPDES permit authorizing such a discharge; the proposed discharge has been approved by the State of California Department of Public Health and the operating agency of the impacted reservoir; and the discharger has an approved fail-safe long-term disposal alternative.
- E.** The discharge of waste to inland surface waters, except in cases where the quality of the discharge complies with applicable receiving water quality objectives, is prohibited. Allowances for dilution may be made at the discretion of the San Diego Water Board. Consideration would include streamflow data, the degree of treatment provided and safety measures to ensure reliability of facility performance. As an example, discharge of secondary effluent would probably be permitted if streamflow provided 100:1 dilution capability.
- F.** The discharge of waste in a manner causing flow, ponding, or surfacing on lands not owned or under the control of the discharger is prohibited, unless the discharge is authorized by the San Diego Water Board.